POWER TEAM
HYDRAULIC TECHNOLOGIES

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Form No. 1000088

Operating Instructions and Parts List for:

FPT Series **LCPT Series**
YPT Series **SQVPT Series**

HYDRAULIC WRENCH OPERATING MANUAL

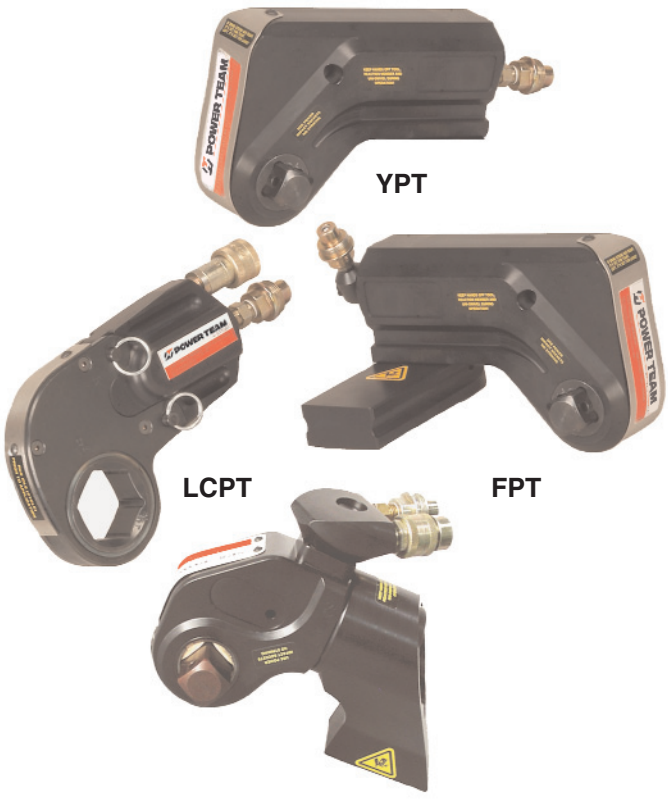
Instructions Before Use

1. Read and understand all instructions before operating the hydraulic wrench. Most malfunctions in new equipment are the result of improper operation and/or setup. It is the operators responsibility to read, understand, and follow all safety instructions.
2. Remove the hydraulic wrench from the shipping container and visually inspect all components for any shipping damage. If any damage is found, notify the carrier immediately. DO NOT USE TOOL.
3. Locate a solid, secure reaction point to absorb and counteract the forces created as the hydraulic wrench is operated.
4. Make sure the hydraulic hoses are free of the reaction point.
5. Momentarily pressurize the system. If the wrench tends to “ride up” or “creep”, stop and readjust the reaction arm to a more solid and secure reaction point.
6. Cycle the hydraulic cylinder inside the wrench to ensure proper function.

Note: Each time the hydraulic cylinder inside the wrench is extended and retracted, it is called a cycle.

Working Pressure

The maximum working pressure for this hydraulic wrench is 10,000 psi (68,900 kPa). Make sure all hydraulic equipment used with this wrench are rated for 10,000 psi (68,900 kPa) operating pressure.



Hydraulic Connections

WARNING

- Never connect or disconnect any hydraulic hoses or fittings without first unloading the wrench and the pump.
- Open all hydraulic controls several times to make sure the system has been completely depressurized.
- If the system includes a gauge, double check the gauge to make sure pressure has been released.
- When making connections with quick disconnect coupling, make sure the coupling are fully engaged. Threaded connections such as fittings, gauges, etc., must be securely tightened and leak-free.

IMPORTANT

Loose or improperly threaded fittings can be potentially dangerous if pressurized, however, over -tightening can cause premature thread failure. Fittings should only be tightened until they are secure and leak-free.

Litho in USA

IMPORTANT SAFETY INFORMATION

This is the safety alert symbol.

It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death

DANGER

Denotes an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

Denotes a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

Denotes a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

CAUTION

Caution used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

IMPORTANT

Denotes an operating or service procedure or condition considered essential for expedient and efficient operation and service.

WARNING

Read and understand this material before operating or servicing this equipment. Failure to understand how to safely operate this tool could result in a accident causing serious injury or death.

- Only qualified operators should install, operate, adjust, maintain, clean, repair, or transport this machinery.
- Inspect tool before use. Replace any worn or damaged parts. Failure to observe these warnings can result in severe injury or death.
- Keep work area clean and well lit.
- When not in use, wrenches and accessories should be properly stored to avoid deterioration.

WARNING To help prevent personal injury,

- Always wear eye protection whenever operating hydraulic equipment.
- Always wear hearing protection as required.
- Operation, repair, or maintenance of hydraulic equipment should be performed by a qualified person who understands the proper function of hydraulic equipment per local directives and standards.
- To prevent personal injury, use common sense. Do not use any power equipment under the influence of any mood altering substances.
- Never place your hands or other body parts near a hydraulic fluid leak. Never use your hands or other body parts to check for a possible leak. High pressure fluid can be injected under your skin causing serious injury and/or infection.
- Electric motors may spark, causing an explosion when flammable materials are present. Do not operate in an explosive atmosphere or in the presence of conductive liquids. Use an air motor or hand pump instead.
- To prevent electrical shock, make sure the pump is properly grounded and the proper voltage is being used.

WARNING

- To prevent personal injury, the remote control must only be used by the wrench operator.
- Do not use hydraulic hoses, pump power, or remote control cords as means of moving the equipment.
- Make sure all hydraulic connections are securely attached. Verify that the hydraulic hoses are not kinked.
- Remain clear of the reaction arm during operation. Never put body parts between the reaction arm and the reaction point.
- Always use top quality impact sockets in good condition and remain clear of sockets during operation because hidden flaws could cause breakage.

CAUTION

To prevent wrench damage, always use the properly sized tool and accessories. Do not use a wrench for anything other than the intended purpose.

Electrical Connections

Make sure the power supply is compatible with the requirements of the electric pump motor. Minimize the length of extension cords and be sure they are of adequate gauge and grounded.

Air Connections

Make sure the air flow rating is adequate and compatible prior to pressuring the pump. Make sure all connections are tight and leak-free.

OPERATION

CAUTION For top performance, frequently inspect wrench, pump, and accessories for visual damage Always follow instructions for proper wrench and pump maintenance.
Do not use other equipment to increase the capability (for example, hammering on socket wrench).

General

Each hydraulic wrench is supplied completely assembled and ready for use. A hydraulic pump is required to provide the speed and pressure that makes the hydraulic wrench system efficient and accurate.

Connecting the System

The hydraulic wrench head and power pack are connected by a 10,000 psi (68,900 kPa) single-line hose assembly. Each end of the hose will have one female connector.

NOTE: DO NOT switch the hose connector from female to male. It is necessary for the hose to have a female connector to engage the male connecter on the hydraulic wrench.

Drive Direction Change

To change the square drive direction, lightly tap on the extended end of the direction control button and it will “slide” through to the other side.

Reaction Arm

Each hydraulic wrench is equipped with a universal reaction arm. The reaction arm is used to absorb and counteract any opposing forces created by the operation of the hydraulic wrench.

Setting Torque

Electric and Air Pumps
1. Make sure the system is fully connected and the proper power supply is available.
2. Use the Pressure/Torque conversion chart supplied with the wrench to find the required pressure setting.
   NOTE: On electric or air pumps, this pressure is set on the pump.
3. Turn on the pump.
4. Press and hold the remote control button.
5. Check the pressure on the gauge.
6. Increase or decrease pressure as required by loosening the locking ring on the pressure regulator valve and turning the thumb screw.
   NOTE: Turn the thumb screw clockwise to increase pressure and counterclockwise to decrease pressure.
   When decreasing pressure, it is necessary to turn the thumb screw to a pressure setting below what is desired and gradually increase pressure to the desired level.
7. Once the desired pressure is stabilized, release the remote control button and tighten the locking ring.
8. Prior to tightening a nut, press the remote control button and confirm the correct pressure has been set.

Manual Pumps
Find the required torque in the Pressure/Torque conversion chart and read across the chart to the corresponding pressure.

Applying the Wrench

1. Place the proper size impact socket on the square drive and secure it properly with the locking ring and pin. Make sure the square drive is fully engaged into the socket.
2. Place the wrench and socket on the nut. Make sure the socket is fully engaged on the nut.
3. Make sure the reaction arm is placed firmly against a stationary object such as an adjacent nut, flange, equipment housing, etc.

NOTE: When positioning the wrench, make sure the hose connection will not hit any stationary object. This may result in snapping a hose connection or breaking the coupler connection.

4. Apply momentary pressure to the system to ensure proper wrench placement.

Operating the Wrench

Electric or Air Pump

Tightening

1. Make sure the hydraulic wrench and the reaction arm are in position for tightening.
2. Ensure the reaction arm is squarely against a solid reaction point.
3. Press and hold the remote control button while the socket turns.
4. When an audible “click” is heard, the hydraulic cylinder inside the wrench is fully extended and will not turn the socket further.

NOTE: The pressure reading on the gauge will go to the preset pressure. This rapid buildup of pressure DOES NOT INDICATE the nut is fully tightened. It only indicates that the hydraulic cylinder is fully extended inside the wrench and cannot turn the socket further.

5. Release the remote control button to allow the hydraulic cylinder inside the wrench to automatically retract until an audible “click” is heard. This completes one cycle.
6. Continue to tighten the nut with successive cycles until the hydraulic cylinder inside the wrench “stalls”.
7. Always attempt one final cycle to make sure the “stall” point has been reached and no audible click is heard.
8. Proceed to the next nut.

Loosening

1. Set the pump to 10,000 psi (68,900 kPa).
2. Make sure the hydraulic wrench and the reaction arm are positioned for loosening.
3. Make sure the reaction arm is squarely against a solid reaction point.
4. Press and hold the remote control button.

NOTE: Pressure will build up as the socket begins to turn.

5. When an audible “click” is heard, the hydraulic cylinder inside the wrench is fully extended and will not turn the socket further.
6. Release the remote control button to allow the hydraulic cylinder inside the wrench to automatically retract until an audible “click” is heard. This completes one cycle.
7. Continue to loosen the nut with successive cycles until the nut can be removed by hand.

Manual Pumps

1. To operate the hydraulic wrench with a hand pump, make sure the pump is rated at 10,000 psi (68,900 kPa) maximum pressure.
2. Connect the hand pump to the hydraulic wrench with a single-line hose assembly.

Tightening

1. Determine the required pressure.
2. Make sure the hydraulic wrench and the reaction arm are in the tightening mode.
3. Pump the hand pump to advance the hydraulic cylinder inside the wrench until the socket stops turning.
4. Release the pump pressure. The hydraulic cylinder inside the wrench will automatically retract and an audible “click” will be heard. This completes one cycle.

Manual Pumps (Tightening continued)

5. Continue to tighten the nut with successive cycles until the needle on the pump gets close to the required pressure.
NOTE: The final torque check is made by paying close attention to the needle on the pressure gauge.
6. Pressurize the wrench until the needle stops on the required pressure.
NOTE: When the pressure is released, the wrench will not make the audible “chick”.
7. Proceed to the next nut.

Loosening

1. Make sure the hydraulic wrench and the reaction arm are on the loosening mode.
2. Pump the hand pump to advance the hydraulic cylinder inside the wrench. As pressure builds, the bolt will begin to loosen.
3. Stop pumping when the socket stops turning.
4. Release the pump pressure. The hydraulic cylinder inside the wrench will automatically retract and an audible “click” will be heard. This completes one cycle.
5. Continue to loosen the nut with successive cycles until the nut can be removed by hand.
6. Proceed to the next nut.

Maintenance

Preventative Maintenance

Inspect hoses and fittings before every use. Connections must be clean and properly connected before each use. Replace worn or damaged fittings. Keep tools clean and protected from damage.

Disassembly Instructions

Removing the Square Drive

1. Remove the two shroud screws.
2. Rotate the square drive until the ratchet retaining screw lines up with the hole in the front of the drive plate.
3. Unscrew the set screw so the square drive can easily slide out.

Disassembly of Cylinder

1. Using a manual pump, advance the wrench until the roll pin can be seen through the access holes in the side of the housing.
2. With a punch and hammer, remove the roll pin which connects the cylinder rod to the rod end.
3. Release the pressure on the pump and the cylinder will retract. Remove the coupler.

WARNING **To prevent personal injury, proceed with caution. Remember, the spring is compressed and is applying pressure against the end cap.**

4. Using the proper hex socket, loosen the end cap and slowly unscrew it.
5. Remove the spring.

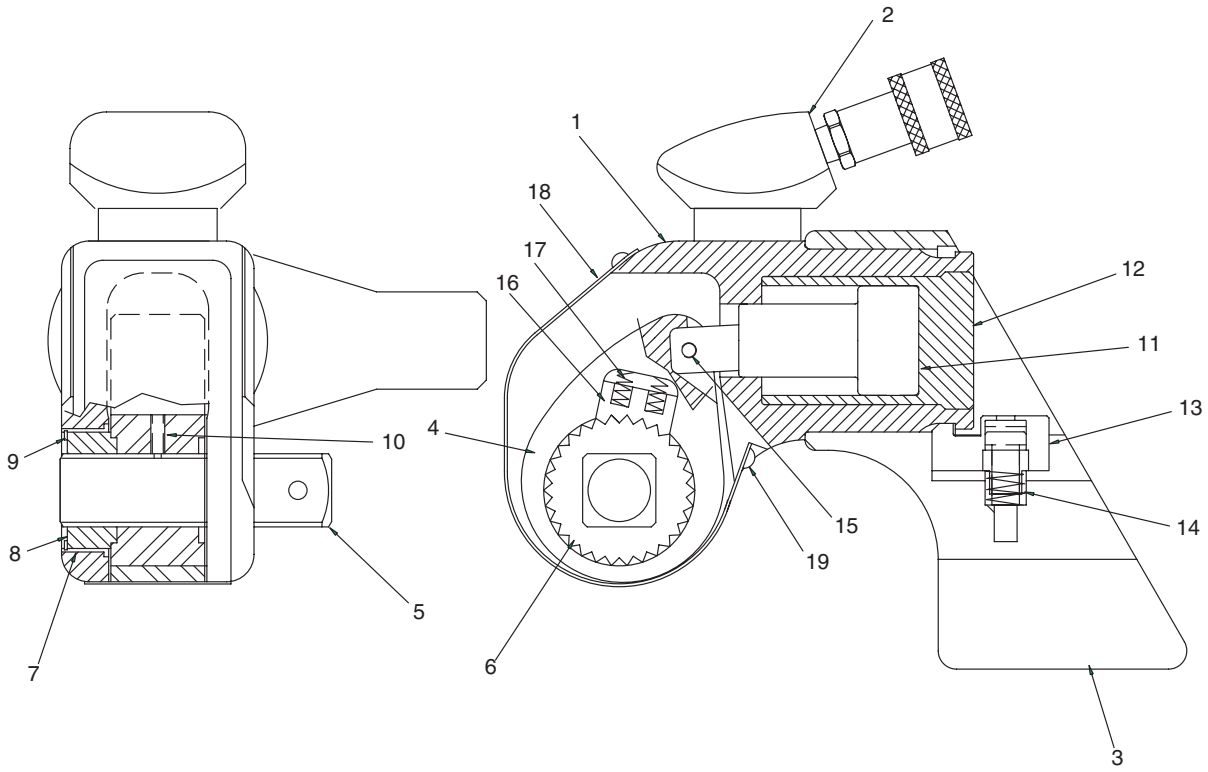
Changing the Piston Seal

1. Drain the oil from the cylinder.
2. Remove the piston end cap from the cylinder rod.
3. Replace the seal.

Removing the Drive Plate and Ratchet

1. Insert the square drive and turn the ratchet and drive plate until the rod end sticks out of the wrench.
2. Take out square drive and pull the remaining parts out of the wrench.

SQVPT SERIES PARTS LIST



Item No.	Description	SQV06PT 3/4" Drive	SQV2PT 3/4" Drive	SQV4PT 1" Drive	SQV8PT 1-1/2" Drive	SQV12PT 1-1/2" Drive
1	Housing	SQV-P6-01	SQV-02-01	SQV-08-01	SQV-08-01	SQV-12-01
2	Uniswivel Assembly	SQV-01-00	SQV-01-00	SQV-001-00	SQV-001-00	SQV-001-00
3	Reaction Arm	SQV-P6-01	SQV-02-03	SQV-04-03	SQV-08-03	SQV-12-03
4	Drive Plate	SQV-P6-04	SQV-02-04	SQV-04-04	SQV-08-04	SQV-12-04
5	Square Drive	SQV-P6-05	SQV-02-05	SQV-04-05	SQV-08-05	SQV-12-05
6	Ratchet	SQV-P6-06	SQV-02-06	SQV-04-06	SQV-08-06	SQV-12-06
7	Bushing	SQV-P6-07	SQV-02-07	SQV-04-07	SQV-08-07	SQV-12-07
8	Drive Sleeve Square	SQV-P6-08	SQV-02-08	SQV-04-08	SQV-08-08	SQV-12-08
9	Retaining Ring	SQV-P6-30	SQV-02-30	SQV-04-30	SQV-08-30	SQV-12-30
10	Set Screw, Ratchet	SQV-P6-09	SQV-02-09	SQV-04-09	SQV-08-09	SQV-12-09
11	Piston Rod Assembly	SQV-P6-61	SQV-02-61	SQV-04-61	SQV-08-61	SQV-12-61
12	End Cap Sleeve	SQV-P6-26	SQV-02-26	SQV-04-26	SQV-08-26	SQV-12-26
13	Reaction Arm Clamp Assembly	SQV-P6-28	SQV-02-28	SQV-04-28	SQV-08-28	SQV-12-28
14	Clamp Spring	SQV-P6-38	SQV-02-38	SQV-04-38	SQV-08-38	SQV-12-38
15	Roll Pin/Drive Plate	SQV-P6-17	SQV-02-17	SQV-04-17	SQV-08-17	SQV-12-17
16	Drive Pawl	SQV-P6-60	SQV-02-60	SQV-04-60	SQV-08-60	SQV-12-60
17	Drive Pawl Spring	SQV-P6-27	SQV-02-27	SQV-04-27	SQV-08-27	SQV-12-27
18	Shroud	SQV-P6-31	SQV-02-31	SQV-04-31	SQV-08-31	SQV-12-31
19	Shroud Screw	SQV-P6-32	SQV-02-32	SQV-04-32	SQV-08-32	SQV-12-32
20	Bushing Square Drive	SQV-P6-00				

PRESSURE/TORQUE CONVERSION CHART
SQV06PT

PRESSURE IN PSI	FT. LBS	KGM	NM	PRESSURE IN BAR
1500	106	15	144	104
1600	113	16	153	110
1800	128	18	173	124
2000	142	20	192	138
2200	156	22	212	152
2400	170	24	231	165
2600	185	26	250	179
2800	199	27	269	193
3000	213	29	289	207
3200	227	31	308	220
3400	241	33	327	234
3600	256	35	346	248
3800	270	37	366	262
4000	284	39	385	276
4200	208	41	404	290
4400	312	43	423	303
4600	327	45	443	317
4800	341	47	462	331
5000	355	49	481	345
5200	369	51	500	358
5400	383	53	520	372
5600	398	55	539	386
5800	412	57	558	400
6000	426	59	577	414
6200	440	61	597	427
6400	454	63	616	441
6600	469	65	635	455
6800	483	67	654	468
7000	497	69	674	482
7200	511	71	693	496
7400	525	73	712	510
7600	540	75	731	524
7800	554	77	751	538
8000	568	79	770	552
8200	582	81	789	565
8400	596	82	808	579
8600	611	84	828	593
8800	625	86	847	607
9000	639	88	866	620
9200	653	90	885	634
9400	667	92	905	648
9600	682	94	924	662
9800	696	96	943	676
10000	710	98	962	690

PRESSURE/TORQUE CONVERSION CHART
SQV2PT

PRESSURE IN				PRESSURE IN
PSI	**FT. LBS**	**KGM**	**NM**	**BAR**
1500	175	24	237	104
1600	186	26	252	110
1800	208	29	282	124
2000	230	32	312	138
2200	253	35	343	152
2400	276	38	374	165
2600	299	41	405	179
2800	322	45	437	193
3000	345	48	468	207
3200	368	51	499	220
3400	391	54	530	234
3600	414	57	561	248
3800	437	60	592	262
4000	460	64	624	276
4200	486	67	655	290
4400	506	70	686	303
4600	529	73	717	317
4800	552	76	748	331
5000	575	80	779	345
5200	598	83	811	358
5400	621	86	842	372
5600	644	89	873	386
5800	667	92	904	400
6000	690	95	935	414
6200	713	99	967	427
6400	736	102	998	441
6600	759	105	1029	455
6800	782	108	1060	468
7000	805	111	1091	482
7200	828	115	1122	496
7400	851	118	1154	510
7600	874	121	1185	524
7800	897	124	1216	538
8000	920	127	1247	552
8200	943	130	1278	565
8400	966	134	1310	579
8600	989	137	1341	593
8800	1012	140	1372	607
9000	1035	143	1403	620
9200	1058	146	1434	634
9400	1081	150	1465	648
9600	1104	153	1497	662
9800	1127	156	1528	676
10000	1150	159	1559	690

PRESSURE/TORQUE CONVERSION CHART
SQV4PT

PRESSURE IN PSI	FT. LBS	KGM	NM	PRESSURE IN BAR
1500	455	63	617	104
1600	485	67	657	110
1800	545	75	739	124
2000	605	84	820	138
2200	665	92	901	152
2400	725	100	983	165
2600	785	109	1064	179
2800	845	117	1145	193
3000	905	125	1227	207
3200	965	133	1308	220
3400	1025	142	1389	234
3600	1085	150	1471	248
3800	1145	158	1552	262
4000	1205	167	1633	276
4200	1265	175	1715	290
4400	1325	183	1796	303
4600	1385	192	1878	317
4800	1445	200	1959	331
5000	1505	208	2040	345
5200	1565	216	2122	358
5400	1625	225	2203	372
5600	1685	233	2284	386
5800	1745	241	2366	400
6000	1805	250	2447	414
6200	1865	258	2528	427
6400	1925	266	2610	441
6600	1985	275	2691	455
6800	2045	283	2772	468
7000	2105	291	2854	482
7200	2165	299	2935	496
7400	2225	308	3016	510
7600	2285	316	3098	524
7800	2345	324	3179	538
8000	2405	333	3260	552
8200	2465	341	3342	565
8400	2525	349	3423	579
8600	2585	358	3504	593
8800	2645	366	3586	607
9000	2705	374	3667	620
9200	2767	383	3751	634
9400	2829	391	3835	648
9600	2891	400	3919	662
9800	2953	408	4003	676
10000	3015	417	4087	690

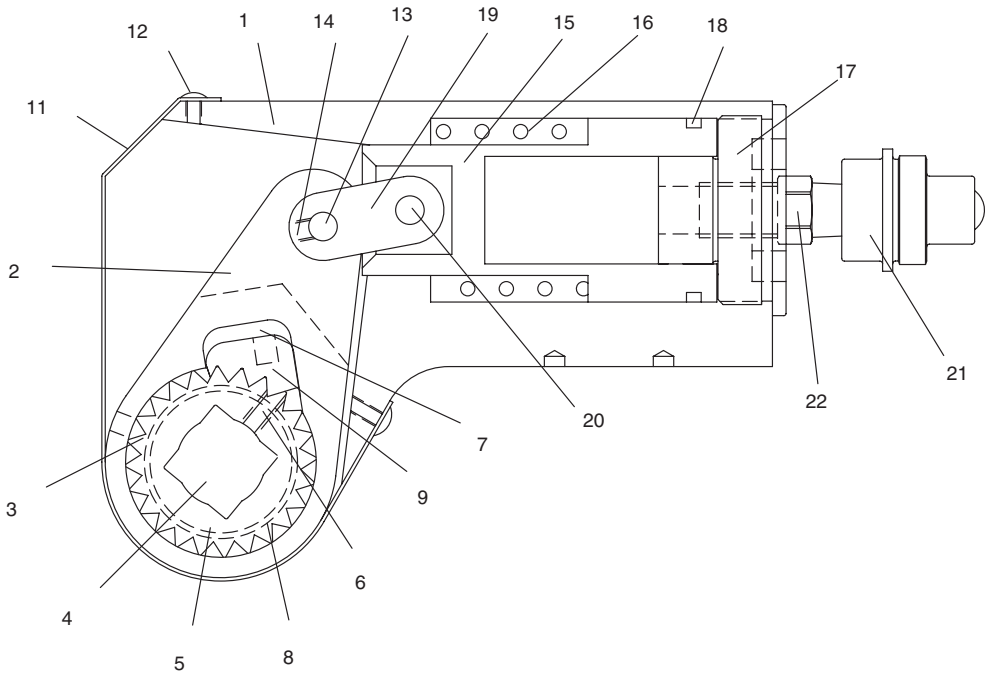
PRESSURE/TORQUE CONVERSION CHART
SQV8PT

PRESSURE IN				PRESSURE IN
PSI	**FT. LBS**	**KGM**	**NM**	**BAR**
1500	1230	170	1667	104
1600	1314	182	1781	110
1800	1482	205	2009	124
2000	1650	228	2237	138
2200	1821	252	2469	152
2400	1992	275	2700	165
2600	2163	299	2932	179
2800	2334	323	3164	193
3000	2505	346	3396	207
3200	2675	370	3626	220
3400	2845	393	3857	234
3600	3015	417	4087	248
3800	3185	440	4318	262
4000	3355	464	4548	276
4200	3526	488	4780	290
4400	3697	511	5012	303
4600	3868	535	5243	317
4800	4039	559	5475	331
5000	4210	582	5707	345
5200	4383	606	5942	358
5400	4556	630	6176	372
5600	4729	654	6411	386
5800	4902	678	6645	400
6000	5075	702	6880	414
6200	5249	726	7116	427
6400	5423	750	7351	441
6600	5597	774	7587	455
6800	5771	798	7823	468
7000	5945	822	8059	482
7200	6117	846	8292	496
7400	6289	870	8525	510
7600	6461	894	8759	524
7800	6633	917	8992	538
8000	6805	941	9225	552
8200	6979	965	9461	565
8400	7153	989	9697	579
8600	7327	1013	9932	593
8800	7501	1037	10168	607
9000	7675	1061	10404	620
9200	7851	1086	10643	634
9400	8027	1110	10881	648
9600	8203	1134	11120	662
9800	8379	1159	11359	676
10000	8555	1183	11597	690

PRESSURE/TORQUE CONVERSION CHART
SQV12PT

PRESSURE IN PSI	FT. LBS	KGM	NM	PRESSURE IN BAR
1500	1650	228	2237	104
1600	1760	243	2386	110
1800	1980	274	2684	124
2000	2200	304	2982	138
2200	2420	335	3281	152
2400	2640	365	3579	165
2600	2860	396	3877	179
2800	3080	426	4175	193
3000	3300	456	4473	207
3200	3520	487	4772	220
3400	3740	517	5070	234
3600	3960	548	5368	248
3800	4180	578	5666	262
4000	4400	609	5965	276
4200	4620	639	6263	290
4400	4840	669	6561	303
4600	5060	700	6859	317
4800	5280	730	7158	331
5000	5500	761	7456	345
5200	5720	791	7754	358
5400	5940	822	8052	372
5600	6160	852	8350	386
5800	6380	882	8649	400
6000	6600	913	8947	414
6200	6820	943	9245	427
6400	7040	974	9543	441
6600	7260	1004	9842	455
6800	7480	1034	10140	468
7000	7700	1065	10438	482
7200	7920	1095	10736	496
7400	8140	1126	11035	510
7600	8360	1156	11333	524
7800	8580	1187	11631	538
8000	8800	1217	11929	552
8200	9020	1247	12228	565
8400	9240	1278	12526	579
8600	9460	1308	12824	593
8800	9680	1339	13122	607
9000	9900	1369	13420	620
9200	10120	1400	13719	634
9400	10340	1430	14017	648
9600	10560	1460	14315	662
9800	10780	1491	14613	676
10000	11000	1521	14912	690

FPT SERIES PARTS LIST



Item No.	Description	F05PT	F1PT	F3PT
1	Housing	F1-01	F1-01	F1-01
2	Drive Plate	FP5-03	Y1-03	Y3-03
3	Ratchet	FP5-10	Y1-10	Y3-10
4	Square Drive	FP5-11	Y1-11	Y3-11
5	Sleeve (2 Rod)	FP5-12	Y1-12	Y3-12
6	Set Screw- Ratchet	FP5-13	Y1-13	Y3-13
7	Spring - Drive Segment	FP5-14	Y1-14	Y3-14
8	O-Ring - Sleeves	FP5-15	Y1-15	Y3-15
9	Drive Segment	FP5-20	Y1-20	Y3-20
10	Reaction Arm (Not Shown)	FP5-30	Y1-30	Y3-30
10a	Reaction Stud (Not Shown)	FP5-31	Y1-31	Y3-31
11	Shroud	FP5-35	Y1-35	Y3-35
12	Shroud Screw	FP5-36	Y1-36	Y3-36
13	Drive Pin	FP5-38	Y1-38	Y3-38
14	Set Screw - Rod End	FP5-39	Y1-39	Y3-39
15	Cylinder Rod	FP5-51	Y1-51	Y3-51
16	Return Spring	FP5-52	Y1-52	Y3-52
17	Piston End Cap	FP5-53	Y1-53	Y3-53
18	O-Ring - Piston Endcap	FP5-54	Y1-54	Y3-54
19	Rod End	FP5-61	Y1-61	Y3-61
20	Roll Pin Rod End	FP5-63	Y1-63	Y3-63
21	Male Coupler	090155	090155	090155
22	Hex Nipple	090101	090101	090101

PRESSURE/TORQUE CONVERSION CHART
F05PT

PRESSURE IN PSI	FT. LBS	KGM	NM	PRESSURE IN BAR
500	15	2.1	20	33
600	21	3.0	29	40
800	25	3.4	33	54
1000	31	4.3	42	68
1200	38	5.2	51	82
1400	44	6.1	60	96
1600	51	7.0	69	110
1800	57	7.9	78	124
2000	64	8.9	87	138
2200	71	9.8	97	152
2400	78	10.8	106	165
2600	86	11.8	116	179
2800	93	12.8	126	193
3000	100	13.8	136	207
3200	108	14.9	146	220
3400	115	15.9	156	234
3600	123	17.0	166	248
3800	130	18.0	177	262
4000	138	19.1	187	276
4200	145	20.1	197	290
4400	152	21.1	207	303
4600	160	22.1	216	317
4800	167	23.1	226	331
5000	174	24.1	236	345
5200	181	25.1	246	358
5400	189	26.1	256	372
5600	196	27.1	266	386
5800	204	28.2	276	400
6000	211	29.2	286	414
6200	218	30.2	296	427
6400	225	31.2	306	441
6600	233	32.2	315	455
6800	240	33.2	325	468
7000	247	34.2	335	482
7200	254	35.2	345	496
7400	262	36.2	355	510
7600	269	37.2	365	524
7800	277	38.3	375	538
8000	284	39.3	385	552
8200	291	40.3	395	565
8400	298	41.3	405	579
8600	306	42.3	414	593
8800	313	43.3	424	607
9000	320	44.3	434	620
9200	327	45.2	443	634
9400	334	46.2	453	648
9600	341	47.2	462	662
9800	348	48.1	472	676
10000	355	49.1	481	690

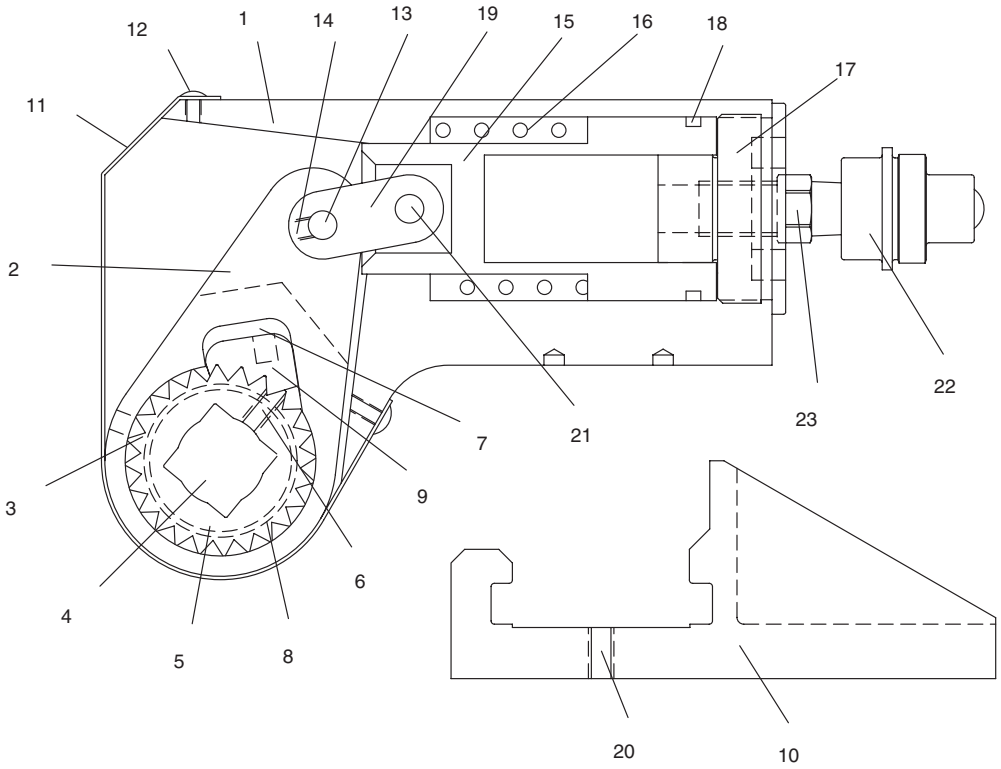
PRESSURE/TORQUE CONVERSION CHART
F1PT

PRESSURE IN PSI	FT. LBS	KGM	NM	PRESSURE IN BAR
1500	170	24	230	104
1600	183	25	248	110
1800	209	29	283	124
2000	235	33	319	138
2200	259	36	351	152
2400	283	39	384	165
2600	307	42	416	179
2800	331	46	449	193
3000	355	49	481	207
3200	380	53	515	220
3400	405	56	549	234
3600	430	59	583	248
3800	455	63	617	262
4000	480	66	651	276
4200	504	70	683	290
4400	528	73	716	303
4600	552	76	748	317
4800	576	80	781	331
5000	600	83	813	345
5200	624	86	846	358
5400	648	90	878	372
5600	672	93	911	386
5800	696	96	943	400
6000	720	100	976	414
6200	744	103	1009	427
6400	768	106	1041	441
6600	792	110	1074	455
6800	816	113	1106	468
7000	840	116	1139	482
7200	864	119	1171	496
7400	888	123	1204	510
7600	912	126	1236	524
7800	936	129	1269	538
8000	960	133	1301	552
8200	984	136	1334	565
8400	1008	139	1336	579
8600	1032	143	1399	593
8800	1056	146	1432	607
9000	1080	149	1464	620
9200	1104	153	1497	634
9400	1128	156	1529	648
9600	1152	159	1562	662
9800	1176	163	1594	676
10000	1200	166	1627	690

PRESSURE/TORQUE CONVERSION CHART
F3PT

PRESSURE IN PSI	FT. LBS	KGM	NM	PRESSURE IN BAR
1500	432	60	586	104
1600	462	64	627	110
1800	523	72	709	124
2000	584	81	792	138
2200	644	89	873	152
2400	704	97	954	165
2600	764	106	1036	179
2800	824	114	1117	193
3000	884	122	1198	207
3200	944	131	1280	220
3400	1004	139	1361	234
3600	1064	147	1442	248
3800	1124	155	1524	262
4000	1184	164	1605	276
4200	1243	172	1685	290
4400	1302	180	1766	303
4600	1362	188	1846	317
4800	1421	196	1926	331
5000	1480	205	2006	345
5200	1539	213	2087	358
5400	1598	221	2167	372
5600	1658	229	2247	386
5800	1717	237	2327	400
6000	1776	246	2408	414
6200	1835	254	2488	427
6400	1894	262	2568	441
6600	1954	270	2648	455
6800	2013	278	2729	468
7000	2072	287	2809	482
7200	2131	295	2889	496
7400	2190	303	2969	510
7600	2250	311	3050	524
7800	2309	319	3130	538
8000	2368	327	3210	552
8200	2427	336	3290	565
8400	2486	344	3371	579
8600	2546	352	3451	593
8800	2605	360	3531	607
9000	2664	368	3611	620
9200	2723	377	3692	634
9400	2782	385	3772	648
9600	2842	393	3852	662
9800	2901	401	3932	676
10000	2960	409	4013	690

YPT SERIES PARTS LIST



Item No.	Description	Y1PT	Y3PT	Y5PT	Y8PT	Y10PT
1	Housing	Y1-01	Y1-01	Y5-01	Y8-01	Y10-01
2	Drive Plate	Y1-03	Y3-03	Y5-03	Y8-03	Y10-03
3	Ratchet	Y1-10	Y3-10	Y5-10	Y8-10	Y10-10
4	Square Drive	Y1-11	Y3-11	Y5-11	Y8-11	Y10-11
5	Sleeve (2 Rod)	Y1-12	Y3-12	Y5-12	Y8-12	Y10-12
6	Set Screw- Ratchet	Y1-13	Y3-13	Y5-13	Y8-13	Y10-13
7	Spring - Drive Segment	Y1-14	Y3-14	Y5-14	Y8-14	Y10-14
8	O-Ring - Sleeves	Y1-15	Y3-15	Y5-15	Y8-15	Y10-15
9	Drive Segment	Y1-20	Y3-20	Y5-20	Y8-20	Y10-20
10	Reaction Arm	Y1-30	Y3-30	Y5-30	Y8-30	Y10-30
11	Shroud	Y1-35	Y3-35	Y5-35	Y8-35	Y10-35
12	Shroud Screw	Y1-36	Y3-36	Y5-36	Y8-36	Y10-36
13	Drive Pin	Y1-38	Y3-38	Y5-38	Y8-38	Y10-38
14	Set Screw - Rod End	Y1-39	Y3-39	Y5-39	Y8-39	Y10-39
15	Cylinder Rod	Y1-51	Y3-51	Y5-51	Y8-51	Y10-51
16	Return Spring	Y1-52	Y3-52	Y5-52	Y8-52	Y10-52
17	Piston End Cap	Y1-53	Y3-53	Y5-53	Y8-53	Y10-531
18	O-Ring - Piston Endcap	Y1-54	Y3-54	Y5-54	Y8-54	Y10-54
19	Rod End	Y1-61	Y3-61	Y5-61	Y8-61	Y10-61
20	Set Screw - Reaction Arm	Y1-62	Y3-62	Y5-62	Y8-62	Y10-62
21	Roll Pin Rod End	Y1-63	Y3-63	Y5-63	Y8-63	Y10-63
22	Male Coupler	090155	090155	090155	090155	090155
23	Hex Nipple	090101	090101	090101	090101	090101

PRESSURE/TORQUE CONVERSION CHART
Y1PT

PRESSURE IN PSI	FT. LBS	KGM	NM	PRESSURE IN BAR
1500	170	24	230	104
1600	183	25	248	110
1800	209	29	283	124
2000	235	33	319	138
2200	259	36	351	152
2400	283	39	384	165
2600	307	42	416	179
2800	331	46	449	193
3000	355	49	481	207
3200	380	53	515	220
3400	405	56	549	234
3600	430	59	583	248
3800	455	63	617	262
4000	480	66	651	276
4200	504	70	683	290
4400	528	73	716	303
4600	552	76	748	317
4800	576	80	781	331
5000	600	83	813	345
5200	624	86	846	358
5400	648	90	878	372
5600	672	93	911	386
5800	696	96	943	400
6000	720	100	976	414
6200	744	103	1009	427
6400	768	106	1041	441
6600	792	110	1074	455
6800	816	113	1106	468
7000	840	116	1139	482
7200	864	119	1171	496
7400	888	123	1204	510
7600	912	126	1236	524
7800	936	129	1269	538
8000	960	133	1301	552
8200	984	136	1334	565
8400	1008	139	1366	579
8600	1032	143	1399	593
8800	1056	146	1432	607
9000	1080	149	1464	620
9200	1104	153	1497	634
9400	1128	156	1529	648
9600	1152	159	1562	662
9800	1176	163	1594	676
10000	1200	166	1627	690

PRESSURE/TORQUE CONVERSION CHART
Y3PT

PRESSURE IN PSI	FT. LBS	KGM	NM	PRESSURE IN BAR
1500	432	60	586	104
1600	462	64	627	110
1800	523	72	709	124
2000	584	81	792	138
2200	644	89	873	152
2400	704	97	954	165
2600	764	106	1036	179
2800	824	114	1117	193
3000	884	122	1198	207
3200	944	131	1280	220
3400	1004	139	1361	234
3600	1064	147	1442	248
3800	1124	155	1524	262
4000	1184	164	1605	276
4200	1243	172	1685	290
4400	1302	180	1766	303
4600	1362	188	1846	317
4800	1421	196	1926	331
5000	1480	205	2006	345
5200	1539	213	2087	358
5400	1598	221	2167	372
5600	1658	229	2247	386
5800	1717	237	2327	400
6000	1776	246	2408	414
6200	1835	254	2488	427
6400	1894	262	2568	441
6600	1954	270	2648	455
6800	2013	278	2729	468
7000	2072	287	2809	482
7200	2131	295	2889	496
7400	2190	303	2969	510
7600	2250	311	3050	524
7800	2309	319	3130	538
8000	2368	327	3210	552
8200	2427	336	3290	565
8400	2486	344	3371	579
8600	2546	352	3451	593
8800	2605	360	3531	607
9000	2664	368	3611	620
9200	2723	377	3692	634
9400	2782	385	3772	648
9600	2842	393	3852	662
9800	2901	401	3932	676
10000	2960	409	4013	690

PRESSURE/TORQUE CONVERSION CHART
Y5PT

PRESSURE IN PSI	FT. LBS	KGM	NM	PRESSURE IN BAR
1500	825	114	1118	104
1600	882	122	1196	110
1800	996	138	1350	124
2000	1110	154	1505	138
2200	1223	569	1658	152
2400	1336	185	1811	165
2600	1449	200	1964	179
2800	1562	216	2117	193
3000	1675	232	2271	207
3200	1788	247	2424	220
3400	1901	263	2577	234
3600	2014	279	2730	248
3800	2127	294	2883	262
4000	2240	310	3037	276
4200	2352	325	3188	290
4400	2464	341	3340	303
4600	2576	356	3492	317
4800	2688	372	3644	331
5000	2800	387	3796	345
5200	2912	403	3948	358
5400	3024	418	4099	372
5600	3136	434	4251	386
5800	3248	449	4403	400
6000	3360	465	4555	414
6200	3472	480	4707	427
6400	3584	496	4858	441
6600	3696	511	5010	455
6800	3808	527	5162	468
7000	3920	542	5314	482
7200	4032	558	5466	496
7400	4144	573	5618	510
7600	4256	589	5769	524
7800	4368	604	5921	538
8000	4480	620	6073	552
8200	4592	635	6225	565
8400	4704	651	6377	579
8600	4816	666	6529	593
8800	4928	682	6680	607
9000	5040	697	6832	620
9200	5152	713	6984	634
9400	5264	728	7136	648
9600	5376	744	7288	662
9800	5488	759	7440	676
10000	5600	774	7591	690

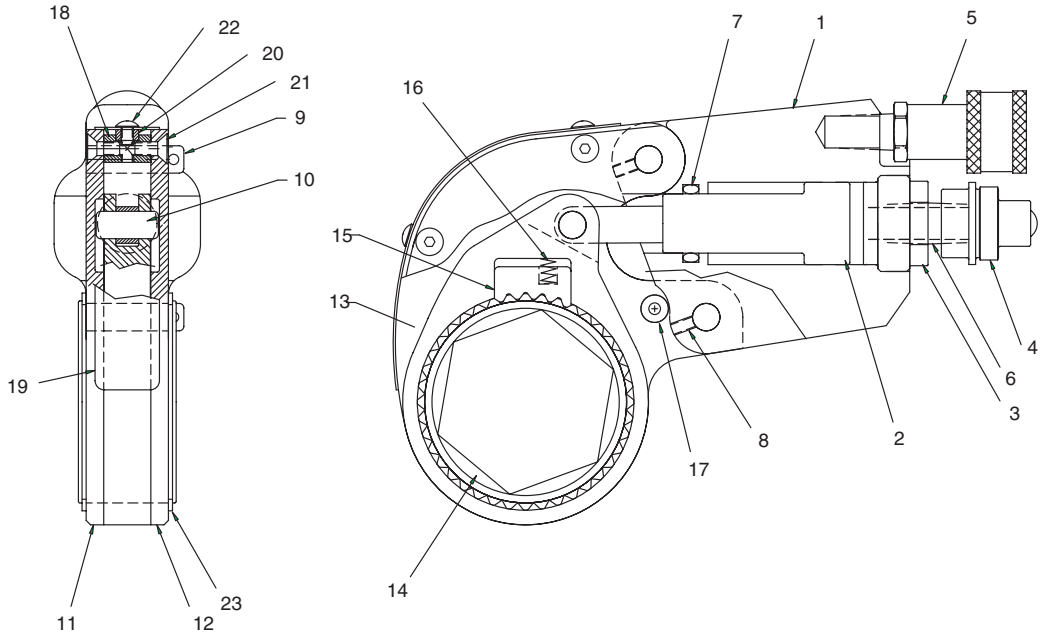
PRESSURE/TORQUE CONVERSION CHART
Y8PT

PRESSURE IN				PRESSURE IN
PSI	**FT. LBS**	**KGM**	**NM**	**BAR**
1500	1210	167	1640	104
1600	1293	179	1753	110
1800	1459	202	1978	124
2000	1625	225	2203	138
2200	1790	248	2427	152
2400	1955	270	2650	165
2600	2120	293	2874	179
2800	2285	316	3098	193
3000	2450	339	3321	207
3200	2615	362	3545	220
3400	2780	384	3769	234
3600	2945	407	3992	248
3800	3110	430	4216	262
4000	3275	453	4440	276
4200	3440	476	4663	290
4400	3605	499	4887	303
4600	3770	521	5111	317
4800	3935	544	5334	331
5000	4100	567	5558	345
5200	4264	590	5780	358
5400	4428	612	6003	372
5600	4592	635	6225	386
5800	4756	658	6447	400
6000	4920	680	6670	414
6200	5084	702	6892	427
6400	5248	726	7114	441
6600	5412	748	7337	455
6800	5576	771	7559	468
7000	5740	794	7781	482
7200	5904	817	8003	496
7400	6068	839	8226	510
7600	6232	862	8448	524
7800	6396	885	8670	538
8000	6560	907	8893	552
8200	6724	930	9115	565
8400	6888	953	9337	579
8600	7052	975	9560	593
8800	7216	998	9782	607
9000	7380	1021	10004	620
9200	7544	1043	10227	634
9400	7708	1066	10449	648
9600	7872	1089	10671	662
9800	8036	1111	10894	676
10000	8200	1134	11116	690

PRESSURE/TORQUE CONVERSION CHART
Y10PT

PRESSURE IN PSI	FT. LBS	KGM	NM	PRESSURE IN BAR
1500	1460	202	1979	104
1600	1566	217	2123	110
1800	1778	246	2410	124
2000	1990	275	2698	138
2200	2198	304	2980	152
2400	2406	333	3262	165
2600	2614	362	3544	179
2800	2822	390	3826	193
3000	3030	419	4107	207
3200	3240	448	4392	220
3400	3450	477	4677	234
3600	3660	506	4961	248
3800	3870	535	5246	262
4000	4080	564	5531	276
4200	4292	594	5818	290
4400	4504	623	6106	303
4600	4716	652	6393	317
4800	4928	682	6680	331
5000	5140	711	6968	345
5200	5350	740	7252	358
5400	5560	769	7537	372
5600	5770	798	7822	386
5800	5980	827	8106	400
6000	6190	856	8391	414
6200	6404	886	8681	427
6400	6618	915	8971	441
6600	6832	945	9261	455
6800	7046	974	9552	468
7000	7260	1004	9842	482
7200	7472	1033	10129	496
7400	7684	1063	10416	510
7600	7896	1092	10704	524
7800	8108	1121	10991	538
8000	8320	1151	11279	552
8200	8530	1180	11563	565
8400	8740	1209	11848	579
8600	8950	1238	12133	593
8800	9160	1267	12417	607
9000	9370	1296	12702	620
9200	9580	1325	12987	634
9400	9790	1354	13271	648
9600	10000	1383	13556	662
9800	10210	1412	13841	676
10000	10420	1441	14125	690

LCPT SERIES PARTS LIST



Item No.	Description	LC2PT	LC4PT	LC8PT	LC20PT
1	Housing	LC-02-01	LC-04-01	LC-08-01	LC-20-01
2	Piston Rod Assembly	LC-02-06	LC-04-06	LC-08-06	LC-20-06
3	End Cap With Seal	LC-02-02	LC-04-02	LC-08-02	LC-20-02
4	Male Coupler	090155	090155	090155	090155
5	Female Coupler	090156	090156	090156	090156
6	Male Hex Nipple	090101	090101	090101	090101
7	Seal Kit	LC-02-13	LC-04-13	LC-08-13	LC-20-13
8	Link Pin Retaining Screw	LC-02-12	LC-04-12	LC-08-12	LC-20-12
9	Link Pin With Ring	LC-02-10	LC-04-10	LC-08-10	LC-20-10
10	Rod Pin	LC-02-05	LC-04-05	LC-08-05	LC-20-05
11	Side Plate Left	LC-02-52L	LC-04-52L	LC-08-52L	LC-20-52L
12	Side Plate Right	LC-02-52R	LC-04-52R	LC-08-52R	LC-20-52R
13	Drive Plate	LC-02-35	LC-04-35	LC-08-35	LC-20-35
14	Ratchet	LC-02-28	LC-04-28	LC-08-28	LC-20-28
15	Drive Pawl	LC-02-22	LC-04-22	LC-08-22	LC-20-22
16	Drive Pawl Spring	LC-02-27	LC-04-27	LC-08-27	LC-20-27
17	Side Plate Spacer	LC-02-32	LC-04-32	LC-08-32	LC-20-32
18	Side Plate Spacer/Shroud	LC-02-47	LC-04-47	LC-08-47	LC-20-47
19	Shroud	LC-02-43	LC-04-43	LC-08-43	LC-20-43
20	Shroud Spacer	LC-02-36	LC-04-36	LC-08-36	LC-20-36
21	Side Plate Screws	LC-02-50	LC-04-50	LC-08-50	LC-20-50
22	Shroud Screws	LC-02-44	LC-04-44	LC-08-44	LC-20-44
23	Side Plate Retaining Ring	LC-02-31	LC-04-31	LC-08-31	LC-20-31

PRESSURE/TORQUE CONVERSION CHART
LC2PT

PRESSURE IN PSI	FT. LBS	KGM	NM	PRESSURE IN BAR
1500	281	39	381	104
1600	300	41	406	110
1800	337	47	457	124
2000	374	52	507	138
2200	411	57	558	152
2400	449	62	608	165
2600	486	67	659	179
2800	524	72	710	193
3000	561	78	760	207
3200	598	83	811	220
3400	636	88	862	234
3600	673	93	913	248
3800	711	98	963	262
4000	748	103	1014	276
4200	785	109	1065	290
4400	823	114	1115	303
4600	860	119	1166	317
4800	898	124	1217	331
5000	935	129	1267	345
5200	972	134	1318	358
5400	1010	140	1369	372
5600	1047	145	1420	386
5800	1085	150	1470	400
6000	1122	155	1521	414
6200	1159	160	1572	427
6400	1197	166	1622	441
6600	1234	171	1673	455
6800	1272	176	1724	468
7000	1309	181	1774	482
7200	1346	186	1825	496
7400	1384	191	1876	510
7600	1421	197	1927	524
7800	1459	202	1977	538
8000	1496	207	2028	552
8200	1533	212	2079	565
8400	1571	217	2129	579
8600	1608	222	2180	593
8800	1646	228	2231	607
9000	1683	233	2281	620
9200	1720	238	2332	634
9400	1758	243	2383	648
9600	1795	248	2434	662
9800	1833	253	2484	676
10000	1870	259	2535	690

PRESSURE/TORQUE CONVERSION CHART
LC4PT

PRESSURE IN				PRESSURE IN
PSI	**FT. LBS**	**KGM**	**NM**	**BAR**
1500	617	85	836	104
1600	658	91	891	110
1800	739	102	1002	124
2000	820	113	1112	138
2200	905	125	1226	152
2400	989	137	1341	165
2600	1074	149	1456	179
2800	1158	160	1570	193
3000	1243	172	1685	207
3200	1329	184	1801	220
3400	1414	196	1917	234
3600	1500	207	2033	248
3800	1585	219	2149	262
4000	1671	231	2265	276
4200	1758	243	2383	290
4400	1845	255	2502	303
4600	1933	267	2620	317
4800	2020	279	2738	331
5000	2107	291	2856	345
5200	2193	303	2973	358
5400	2279	315	3090	372
5600	2366	327	3207	386
5800	2452	339	3324	400
6000	2538	351	3441	414
6200	2625	363	3558	427
6400	2712	375	3676	441
6600	2799	387	3794	455
6800	2886	399	3912	468
7000	2973	411	4030	482
7200	3061	423	4149	496
7400	3149	435	4268	510
7600	3236	448	4378	524
7800	3324	460	4506	538
8000	3412	472	4625	552
8200	3500	484	4744	565
8400	3588	496	4863	579
8600	3675	508	4982	593
8800	3763	520	5101	607
9000	3851	533	5220	620
9200	3939	545	5340	634
9400	4027	557	5460	648
9600	4116	569	5579	662
9800	4204	581	5699	676
10000	4292	594	5818	690

PRESSURE/TORQUE CONVERSION CHART
LC8PT

PRESSURE IN PSI	FT. LBS	KGM	NM	PRESSURE IN BAR
1500	1350	187	1830	104
1600	1440	199	1952	110
1800	1620	224	2196	124
2000	1800	249	2440	138
2200	1980	274	2684	152
2400	2160	299	2928	165
2600	2340	324	3172	179
2800	2520	349	3416	193
3000	2700	373	3660	207
3200	2880	398	3904	220
3400	3060	423	4148	234
3600	3240	448	4392	248
3800	3420	473	4636	262
4000	3600	498	4880	276
4200	3780	523	5124	290
4400	3960	548	5368	303
4600	4140	573	5612	317
4800	4320	597	5856	331
5000	4500	622	6100	345
5200	4680	647	6344	358
5400	4860	672	6588	372
5600	5040	697	6832	386
5800	5220	722	7076	400
6000	5400	747	7320	414
6200	5580	772	7564	427
6400	5760	797	7808	441
6600	5940	822	8052	455
6800	6120	846	8296	468
7000	6300	871	8540	482
7200	6480	896	8784	496
7400	6660	921	9028	510
7600	6840	946	9272	524
7800	7020	971	9516	538
8000	7200	996	9760	552
8200	7380	1021	10004	565
8400	7560	1046	10248	579
8600	7740	1070	10492	593
8800	7920	1095	10736	607
9000	8100	1120	10980	620
9200	8280	1145	11224	634
9400	8460	1170	11468	648
9600	8640	1195	11712	662
9800	8820	1220	11956	676
10000	9000	1245	12200	690

PRESSURE/TORQUE CONVERSION CHART
LC20PT

PRESSURE IN PSI	FT. LBS	KGM	NM	PRESSURE IN BAR
500	1022	141	1385	33
540	1100	152	1491	36
600	1227	170	1663	40
800	1636	226	2218	54
1000	2045	283	2772	68
1075	2200	304	2982	73
1200	2454	339	3327	82
1400	2863	396	3881	96
1600	3272	453	4436	110
1800	3681	509	4990	124
2000	4090	566	5544	138
2200	4499	622	6099	152
2400	4908	679	6653	165
2600	5317	735	7208	179
2690	5500	761	7456	185
2800	5726	792	7762	193
3000	6135	848	8317	207
3200	6544	905	8871	220
3400	6953	962	9425	234
3600	7362	1018	9980	248
3800	7771	1075	10534	262
4000	8180	1131	11089	276
4200	8589	1188	11643	290
4400	8998	1244	12198	303
4600	9407	1301	12752	317
4800	9816	1358	13307	331
5000	10225	1414	13861	345
5200	10624	1471	14415	358
5400	11043	1527	14970	372
5600	11452	1584	15524	386
5800	11861	1640	16079	400
6000	12270	1697	16633	414
6200	12679	1754	17188	427
6400	13088	1810	17742	441
6600	13497	1867	18297	455
6800	13906	1923	18851	468
7000	14315	1980	19405	482
7200	14724	2036	19960	496
7400	15133	2093	20514	510
7600	15542	2149	21069	524
7800	15951	2206	21623	538
8000	16360	2263	22178	552
8120	16600	2296	22503	560
8200	16769	2319	22732	565
8400	17178	2376	23286	579
8600	17587	2432	23841	593
8800	17996	2489	24395	607
9000	18405	2545	24950	620
9200	18814	2602	25504	634
9400	19223	2659	26059	648
9600	19632	2715	26613	662
9800	20041	2772	27168	676
10000	20450	2828	27722	690

BOLT - TORQUE AND TOOL GUIDELINE CHARTS

BOLT - TORQUE

TOOL GUIDELINE

SAE1 SAE 2 30,000 PSI	ASTM 193 B7 BOLT	8-7 A/F HEAVY HEX NUT	ASTM 354 B8 60000 PSI	FT. LBS.	RECOMMENDED MODEL: SQUARE DRIVE MAKE-UP ONLY	ALT.	LIMITED CLEARANCE MAKE-UP	SQUARE DRIVE BREAK OUT	ALT.	LIMITED CLEARANCE BREAK OUT
1”	7/8”	1-7/16”		**300**	SQV06PT	F1PT	LC2PT	SQVP6PT	F1PT	LC2PT
1-1/8”	1”	1-5/8”	7/8”	**425**	SQV06PT	F1PT	LC2PT	SQV2PT	F1PT	LC2PT
				500	SQV06PT	F1PT	LC2PT	SQV2PT	F1PT	LC2PT
1-1/4”			1”	**600**	SQV2PT	F1PT	LC2PT	SQV2PT	F1PT	LC2PT
1-3/8”	1-1/8”	1-13/16”		**700**	SQV2PT	F1PT	LC2PT	SQV2PT	F3PT	LC2PT
	1-1/4”	2”	1-1/8”	**800**	SQV2PT	F1PT	LC2PT	SQV2PT	F3PT	LC4PT
1-1/2”				**900**	SQV2PT	F1PT	LC2PT	SQV4PT	F3PT	LC4PT
				1,000	SQV2PT	F1PT	LC2PT	SQV4PT	F3PT	LC4PT
1-5/8”	1-3/8”	2-3/16”	1-1/4”	**1.250**	SQV4PT	F3PT	LC2PT	SQV4PT	F3PT	LC4PT
				1,350	SQV4PT	F3PT	LC2PT	SQV4PT	F3PT	LC4PT
	1-1/2”	2-3/8”	1-3/8”	**1,500**	SQV4PT	F3PT	LC2PT	SQV4PT	F05PT	LC4PT
1-3/4”				**1,600**	SQV4PT	F3PT	LC4PT	SQV4PT	F05PT	LC4PT
1-7/8”				**1,800**	SQV4PT	F3PT	LC4PT	SQV4PT	F05PT	LC4PT
	1-5/8”	2-9/16”		**2,000**	SQV4PT	F3PT	LC4PT	SQV4PT	F05PT	LC8PT
2”				**2,200**	SQV4PT	F3PT	LC4PT	SQV8PT	F05PT	LC8PT
	1-3/4”	2-3/4”	1-5/8”	**2,600**	SQV4PT	F3PT	LC4PT	SQV8PT	F8PT	LC8PT
2-1/4”				**3,000**	SQV8PT	F05PT	LC4PT	SQV8PT	F8PT	LC8PT
	1-7/8”	2-15/16”	1-3/4”	**3,700**	SQV8PT	F05PT	LC8PT	SQV8PT	F8PT	LC8PT
2-1/2 ”	2”	3-1/8”		**4,000**	SQV8PT	F05PT	LC8PT	SQV8PT	F8PT	LC8PT
			1-7/8	**4,400**	SQV8PT	F05PT	LC8PT	SQV12PT	F8PT	LC20PT
2-3/4”			2”	**5,100**	SQV8PT	F05PT	LC8PT	SQV12PT	F10PT	LC20PT
	2-1/4”	3-1/2”		**6,000**	SQV8PT	F8PT	LC8PT	SQV12PT	F10PT	LC20PT
3”		3-7/8”	2-1/4”	**7,000**	SQV8PT	F8PT	LC8PT	SQV12PT	F10PT	LC20PT
	2-1/2”			**8,000**	SQV12PT	F8PT	LC20PT	SQV12PT		LC20PT
3-1/4”				**9,000**	SQV12PT	F10PT	LC20PT	SQV30PT		LC20PT
3-1/2”	2-3/4”	4-1/4”	2-1/2”	**10,000**	SQV12PT	F10PT	LC20PT	SQV30PT		
				11,500	SQV12PT		LC20PT	SQV30PT		
3-3/4”	3”	4-5/8”	2-3/4”	**13,000**	SQV30PT		LC20PT	SQV30PT		
4”				**14,500**	SQV30PT			SQV30PT		
				15,500	SQV30PT		FOR	SQV30PT		FOR
	3-1/4”	5”	3”	**16,500**	SQV30PT		HIGHER	SQV30PT		HIGHER
4-1/4”				**19,500**	SQV30PT		TORQUE	SQV30PT		TORQUE
	3-1/2”	5-3/8”	3-1/4”	**20,500**	SQV30PT		VALUES			VALUES
4-1/2”				**21,500**	SQV30PT					
				24,500	SQV30PT		PLEASE	PLEASE		
4-3/4”	3-3/4”	5-3/4”	3-1/2”	**25,500**	SQV30PT		INQUIRE	INQUIRE		
6-1/2”	4-1/4”			**29,500**	SQV30PT					